

**4 & 5/2022 Klamath River Water Quality and Lost River Sucker Habitat
Proposals
(SENT)**

2029 Sargent Avenue
Klamath Falls, OR 97601-1747

April 27, 2022

A. Heck

US Bureau of Reclamation,
Klamath Basin Area Office
6600 Washburn Way
Klamath Falls OR 97603-9365
Tel.: (541) 883-6935
Epost: aheck@usbr.gov

Dear US Bureau of Reclamation Klamath Basin Office Area Manager Mr. Heck:

Per Year 1 Klamath Funding Bi-Partisan Infrastructure Law US Fish and Wildlife Service, Grants Notice Funding Opportunity Number F22AS00250; until May 08, 2022 "the U.S. Fish and Wildlife Service (FWS) is soliciting proposals for restoration activities in the Klamath Basin of Southern Oregon and Northern California. Proposals must demonstrate how the proposed restoration will improve conditions and achieve habitat restoration for waterfowl and/or native fish and wildlife species, and other aquatic species throughout the Klamath Basin."

(<https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>)

Thus I herewith now support and vote for the US Bureau of Reclamation, Klamath Basin Office to apply for the office to receive enough of the F22AS00250 grant money, so that from the F22AS00250 grant money that the office receives, the office funds both Reclamation's purchase of a Whooshh® System selective fish elevator (<https://www.whooshh.com/>) for, and Reclamation's installation of a Whooshh® System

selective fish elevator at, each of every Lost River Dam – including Anderson-Rose, Lost River Diversion, Harpold, Malone, and Clear Lake Reservoir – where for the purpose of enabling restoration of Lost River Sucker spawning migration, that was from Tule Lake, California to the former and current Lost River Sucker spawning headwaters of upper Lost River, a fish elevator is necessary.

Per <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> : "This funding opportunity is intended for projects and activities that support or will help improve river, riparian, lake, and wetland habitats, which historically supported millions of fish, waterfowl, and other native wildlife. The Service invites project proposals that fall within the entire Klamath Basin drainage from the headwaters to the mouth of the Klamath River.

Klamath Basin stakeholders have a long history of working together on restoration activities, and have also undertaken the enormous challenge of resolving major natural resource conflicts in the Klamath Basin.

Applicants are, therefore, encouraged to submit project proposals that seek out and/or build upon opportunities for collaboration with other conservation partners in the Klamath Basin. As such, the Service is encouraging project proposals to include letters of support from project partners, stakeholders, and other contributors describing their support and any role they may have in assisting with the project.

Endorsement letters will help the Service judge whether projects are widely supported. The Service encourages project proposals to include letters of support from local Tribes, Counties and other local governments, States or State Agencies, and other conservation partners. Special consideration will also be given to restoration projects proposed on tribal lands or those that may affect tribes and/or their lands."

Thank you for processing this vote for installation of fish elevator tubes at Lost River dams.

Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology.

Post Script: During the immediately forthcoming few days, I will try to send for you a recapitulation of our April 27, 2022 afternoon telephone conversation, concerning both ESA listed shortnose and Lost River suckers, and the Upper Klamath Lake Ball Bay southwest circular excavated area, that in 1963 I observed a large number of shortnose suckers, swimming head to tail fin counterclockwise in a continuous loop of.

(SENT)

2029 Sargent Avenue
Klamath Falls, OR 97601

April 28, 2022

Whooshh.com Investor Relations Personnel
investorrelations@whooshh.com

Dear Whooshh.com Investor Relations Personnel:

The U.S. Fish and Wildlife Service is currently seeking proposals for grant requests, of which U.S. Fish and Wildlife may award to grantees, grants for the purpose of improving conditions and achieving "habitat restoration for waterfowl and/or native fish and wildlife species, and other species throughout the Klamath Basin"*. Description of the grant opportunity is available at

<https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> .

The current closing date for applications is May 08, 2022. "Electronically submitted applications must be submitted no later than 11:59 p.m., ET, on the listed application due date."*The estimated total program funding is \$15,000,000.00, with an award ceiling of \$2,000,000.00 and an award floor of \$50,000.00.

Concerning this habitat restoration opportunity, I herewith provide a slightly edited version of my 4/27/2022 epost for the U.S. Bureau of Reclamation Klamath Basin

Area Office: "

April 27, 2022

A. Heck

US Bureau of Reclamation, Klamath Basin Area Office

6600 Washburn Way

Klamath Falls OR 97603-9365

Tel.: (541) 883-6935

Epost: aheck@usbr.gov

Dear US Bureau of Reclamation Klamath Basin Office Area Manager Mr. Heck:

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Thank you for processing this vote for installation of fish elevator tubes at Lost River dams.

Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology."

I estimate that Whooshh® system fish elevators may provide critical Lost River migration restoration for Endangered Species Act- (ESA) listed Lost River Suckers. Lost River Suckers are also ESA listed in the Klamath River/Link River/Upper Klamath Lake system, that per about ten miles of the Lost River Diversion Channel, is connected with Lost River; and where the second lowest fish ladder in the United States of America was built for the suckers passage past Link River Dam. However only one sucker has been observed to use that second lowest fish ladder, apparently because the suckers prefer using the outflow "stilling basin" that is immediately east of that fish ladder in Link River Dam.

Thank you Whooshh.com Investor Relations Personnel, for processing this epost.

Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology.

*From web page of <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> .

(SENT)

2029 Sargent Avenue
Klamath Falls, OR 97601

April 30, 2022

Klamath Falls South Suburban Sanitary District Personnel
2201 Laverne Ave, Klamath Falls, OR 97603
Tel.: (541) 882-5744
URL: <https://www.sssd.org/>

SUBJECT: Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and Wildlife Service Funding Opportunity Number: F22AS00250 Grant (<https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>).

Dear Klamath Falls South Suburban Sanitary District (SSSD) Personnel:

Upper Klamath Lake, Link River, Lake Ewauna, and upper Klamath River to Iron Gate Dam are known to be naturally eutrophic of phosphorous and nitrogen, and are said to be hypereutrophic of anthropogenic-supplied phosphorous and nitrogen. Recently it has been claimed that high phosphorous levels in Upper Klamath Lake are causing critical reduction of two Endangered Species Act-listed, Upper Klamath Lake/Lake Ewauna sucker fish populations, the Lost River Sucker (cw'aam) and the Shortnose Sucker (koptu), per the high phosphorous levels promoting excessive blue-green algae growth. One of the strongest claims against Copco 1 and Iron Gate reservoirs, is the abundant toxic anabaena and microcystis blue-green algae populations that hypereutrophic Klamath River water supports in both reservoirs.

A reasonable intervention to reduce algal growth supporting phosphorous and nitrogen in Upper Klamath Lake, and to reduce toxic anabaena and microcystis blue-green algae populations in Copco 1 and Iron Gate reservoirs, and to improve Klamath River water quality, is to add tertiary wastewater treatment to the city of Chiloquin municipal wastewater treatment plant. However on June 22, 2021 the City of Chiloquin opted – per grant funding mostly -- for construction of a new \$3.2 million sewage treatment lagoon complex to replace the Chiloquin municipal water secondary treatment plant, although that treatment venue risks groundwater contamination, and continues to deplete fresh water wells that could be supplemented with tertiary treated, clean recycled water. Also, if as planned, the treated lagoon effluent is used for crop irrigation, some of the effluent nutrients might possibly migrate to Upper Klamath Lake, depending on where the effluent is applied to cropland.

Since both the City of Klamath Falls municipal wastewater treatment plant, and the Klamath Falls South Suburban Sanitary District (SSSD) wastewater treatment lagoons, together add to Lake Ewauna a much larger quantity of phosphorous and nitrogen than what the Chiloquin municipal wastewater treatment plant was last year adding to the Williamson River, adding a tertiary wastewater treatment facility to the City of Klamath Falls municipal wastewater treatment plant and to the Klamath Falls South Suburban Sanitary District wastewater treatment lagoons, should result in a large reduction in phosphorous and nitrogen support of blue-green algae growth in Lake Ewauna and Klamath River.

Given that (1) the city of Klamath Falls is currently completing a \$54 million upgrade – primarily at the expense of the city's ratepayers -- of the city's municipal wastewater treatment plant, that will improve the quality of the plant's treated water effluent discharge to Lake Ewauna, although that water will not be tertiary treated before it is discharged to Lake

Ewauna; and (2) the Klamath Falls South Suburban Sanitary District wastewater treatment lagoons, currently serve as only secondary treatment of suburban wastewater before that wastewater is discharged into Lake Ewauna, and are located within 1.5 miles of the Klamath Falls city municipal wastewater treatment plant, with a large tract of vacant land between them; (3) a new wastewater tertiary treatment facility for both the SSSD lagoons and the Klamath Falls municipal wastewater treatment plant, could be built to provide best quality treated wastewater for urban/suburban water recycling and/or discharge to Lake Ewauna.

(Since I lived aboard a U.S. Navy aircraft carrier at sea for 11 months, 47 years ago, I have no trouble with consuming cleaned and recycled sea-discharged wastewater. Our aircraft carrier wastewater flushed directly to the sea from which we derived our entire daily fresh water supply.)

“Department of Environmental Quality” (DEQ) “Chapter 340 Division 41 Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon 340-041-0007 Statewide Narrative Criteria”

(<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68690>), states: “(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.”

Per the immediately aforesaid DEQ “Chapter 340 Division 41 Water Quality Standards, Oregon Department of Environmental Quality has recurrently sought to encourage, guide, and promote Chiloquin and Klamath Falls to upgrade their municipal wastewater treatment plants with tertiary wastewater treatment, so as to substantially improve Upper Klamath Lake and Klamath River water quality. Recurrently, and even though the City of Corvallis has utilized tertiary wastewater treatment for many years, the Cities of Chiloquin and Klamath Falls have claimed that they financially couldn't practicably afford to install a tertiary wastewater treatment facility at their municipal wastewater treatment plants.

Not only has Klamath County been in severe to exceptional drought for multiple years of the immediately previous six years now, but also climate change has given a new aridity to Klamath County, that has reduced Klamath County's annual average snowpack – e.g. Crater Lake's 1940 – 2019 average snowpack declined 36% (information derived from U.S. Department of the Interior Crater Lake Winter/Spring 2008-2009 Crater Lake Reflections newspaper, and from Herald and News 4/12/2022) – so that tributary flows to Upper Klamath Lake, Klamath River, and Lost River have been reduced. Climate change reduced water volume flow from Upper Klamath Lake, per Link River to Lake Ewauna, may significantly benefit from wastewater discharge flows from the Klamath Falls municipal wastewater treatment plant, and the SSSD wastewater lagoons, being tertiary treated; in consequence of those comparatively small wastewater discharge flows, due to tertiary treatment, both ceasing to add much phosphorous and nitrogen to Klamath River, and diluting phosphorous and nitrogen in Klamath River.

Much Link River and Klamath River irrigation withdrawal was curtailed in 2021, so as to maintain for fish, higher Upper Klamath Lake levels and greater Klamath River flows. Groundwater levels in the Lake Ewauna/Lost River Klamath Basin have lowered greatly – e.g. the City of Merrill had to lower its well 80 feet – and aren't predicted to recover in the near to intermediate future.

Of these and related circumstances – including many years of grossly deficient water volume supply for Lower Klamath National Wildlife Refuge – I find and herewith now vote that the City of Klamath Falls and the Klamath Falls South Suburban Sanitary District should each apply to receive adequate funding from the Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and Wildlife Service Funding Opportunity Number: F22AS00250, so that they may each construct a new tertiary wastewater treatment plant to utilize for final cleaning, and possibly recycling, of their wastewater. The City of Klamath Falls municipal wastewater treatment plant and SSSD wastewater treatment lagoons could both use the same tertiary treatment plant.

Description of the number F22AS00250 grant opportunity is available at <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> . The current closing date for applications is May 08, 2022. "Electronically submitted applications must be submitted no later than 11:59 p.m., ET, on the listed application due date."* The estimated total program funding is \$15,000,000.00, with an award ceiling of \$2,000,000.00 and an award floor of \$50,000.00.

Thank you for processing this advocacy petition and vote, for providing funds to construct tertiary wastewater treatment facilities, for the City of Klamath Falls municipal wastewater treatment plant, and for the Klamath Falls South Suburban Sanitary District wastewater treatment lagoons.

Respectfully yours,
Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology
*Ref.: Internet URL: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>

Chapter 340

Division 41

WATER QUALITY STANDARDS: BENEFICIAL USES, POLICIES, AND CRITERIA FOR OREGON

340-041-0007
Statewide Narrative Criteria

(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

(SENT)

2029 Sargent Avenue
Klamath Falls, OR 97601

April 30, 2022

Klamath Falls City Public Works Personnel

226 S 5th Street

Klamath Falls, OR 97601

Tel.: 541-883-5363

Epost: Citypublicworks@klamathfalls.city

SUBJECT: Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and Wildlife Service Funding Opportunity Number: F22AS00250 Grant

(<https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>).

Dear City of Klamath Falls Public Works Department Personnel:

Upper Klamath Lake, Link River, Lake Ewauna, and upper Klamath River to Iron Gate Dam are known to be naturally eutrophic of phosphorous and nitrogen, and are said to be hypereutrophic of anthropogenic-supplied phosphorous and nitrogen. Recently it has been claimed that high phosphorous levels in Upper Klamath Lake are causing critical reduction of two Endangered Species Act-listed, Upper Klamath Lake/Lake Ewauna sucker fish populations, the Lost River Sucker (cw'aam) and the Shortnose Sucker (koptu), per the high phosphorous levels promoting excessive blue-green algae growth. One of the strongest claims against Copco 1 and Iron Gate reservoirs, is the abundant toxic anabaena and microcystis blue-green algae populations that hypereutrophic Klamath River water supports in both reservoirs.

A reasonable intervention to reduce algal growth supporting phosphorous and nitrogen in Upper Klamath Lake, and to reduce toxic anabaena and microcystis blue-green algae populations in Copco 1 and Iron Gate reservoirs, and to improve Klamath River water quality, is to add tertiary wastewater treatment to the city of Chiloquin municipal wastewater treatment plant. However on June 22, 2021 the City of Chiloquin opted – per grant funding mostly -- for construction of a new \$3.2 million sewage treatment lagoon complex to replace the Chiloquin municipal water secondary treatment plant, although that treatment venue risks groundwater contamination, and continues to deplete fresh water wells that could be supplemented with tertiary treated, clean recycled water. Also, if as planned, the treated lagoon effluent is used for crop irrigation, some of the effluent nutrients might possibly migrate to Upper Klamath Lake, depending on where the effluent is applied to cropland.

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Given that (1) the city of Klamath Falls is currently completing a \$54 million upgrade – primarily at the expense of the city's ratepayers -- of the city's municipal wastewater treatment plant, that will improve the quality of the plant's treated water effluent discharge to Lake Ewauna, although that water will not be tertiary treated before it is discharged to Lake Ewauna; and (2) the Klamath Falls South Suburban Sanitary District (SSSD) wastewater treatment lagoons, currently serve as only secondary treatment of suburban wastewater before that wastewater is discharged into Lake Ewauna, and are located within 1.5 miles of the Klamath Falls city municipal wastewater treatment plant, with a large tract of vacant land between them; (3) a new wastewater tertiary treatment facility for both the SSSD lagoons and the Klamath Falls municipal wastewater treatment plant, could be built to provide best quality treated wastewater for urban/suburban water recycling and/or discharge to Lake Ewauna. (Since I lived aboard a U.S. Navy aircraft carrier at sea for 11 months, 47 years ago, I have no trouble with consuming cleaned and recycled sea-discharged wastewater. Our aircraft carrier wastewater flushed directly to the sea from which we derived our entire daily fresh water supply.)

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Not only has Klamath County been in severe to exceptional drought for multiple years of the immediately previous six years now, but also climate change has given a new aridity to Klamath County, that has reduced Klamath County's annual average snowpack – e.g. Crater Lake's 1940 – 2019 average snowpack declined 36% (information derived from U.S. Department of the Interior Crater Lake Winter/Spring 2008-2009 *Crater Lake Reflections* newspaper, and from *Herald and News* 4/12/2022) – so that tributary flows to Upper Klamath Lake, Klamath River, and Lost River have been reduced. Climate change reduced water volume flow from Upper Klamath Lake, per Link River to Lake Ewauna, may significantly benefit from wastewater discharge flows from the Klamath Falls municipal wastewater treatment plant, and the SSSD wastewater lagoons, being tertiary treated; in consequence of those comparatively small wastewater discharge flows, due to tertiary treatment, both ceasing to add much phosphorous and nitrogen to Klamath River, and diluting phosphorous and nitrogen in Klamath River.

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Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology

*Ref.: Internet URL: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>

ssouders@klamathfalls.city

jwall@klamathfalls.city

alakey@klamathfalls.city

(SENT)

2029 Sargent Avenue
Klamath Falls, OR 97601

May 03, 2022

City of Klamath Falls Attorney Mr. Michael Swanson
500 Klamath Avenue
Klamath Falls, OR 97601
Phone: 541-883-5323
Epost: jcole@klamathfalls.city

Dear City of Klamath Falls Attorney Mr. Michael Swanson:

Herewith per inclusion of this forward is a copy of my May 02, 2022 epost for City of Klamath Falls Public Works Department Personnel.

Thank you for processing this epost forward!

Respectfully yours,

Danny Hull, BS Biology, AAS Water Quality Control Environmental Health
Technology

2029 Sargent Avenue
Klamath Falls, OR 97601-1747

May 06, 2022

A. Heck

US Bureau of Reclamation, Klamath Basin Area Office

6600 Washburn Way

Klamath Falls OR 97603-9365

Tel.: (541) 883-6935

Epost: aheck@usbr.gov

Dear US Bureau of Reclamation Klamath Basin Office Area Manager Mr. Heck:

During our April 27, 2022 telephone conversation, I mentioned (1) the Shortnose Sucker; (2) the Lost River Sucker; (3) an approximately 11" Flat Head Catfish that I caught in Gerber Reservoir; (4) Link River Putnam's Point 4,137.8' elevation natural reef. Some of the significance of each of those topics that I wanted to express, is as follows:

(1) Most likely in the Spring of 1964 – although it may have been sometime in 1963 – myself and several family members observed what appeared to be many hundreds of Shortnose suckers, that were swimming counter clockwise in the approximately ½ city block size, circular human excavated area on the south west side of Upper Klamath Lake Ball Bay, approximately 2/3 of a mile north of the Highway 140 east side gravel pile storage, that is just north and west of a large fenced private pasture. Most of the suckers were near 12" long. Several of the suckers had lamprey ulcerations

on their dorsal areas, and the numerous suckers were swimming nearly head to tail fin together.

(2) For partial restoration of Lost River Sucker migration in Lost River, the Lost River Suckers might be collectible with a Whooshh[®] (<https://www.whooshh.com/>) fish elevator tube system at Anderson-Rose Dam on Lost River, and then transported via truck to Clear Lake Reservoir that is on Lost River, for migration to Lost River headwaters – Willow Creek for example – spawning areas. I estimate that young Lost River Suckers slip downstream from Clear Lake Reservoir to Tule Lake, where they become stranded for the rest of their lives.

(3) Approximately 1985 I caught a near 11” Flat Head Catfish – likely on an “A” canal minnow, though possibly on an earthworm – in Gerber Reservoir (also in Gerber Reservoir, with an earthworm I caught what appears to have been a 5 pound Corydoras home aquarium type of catfish!). If Flat Head Catfish are reproductively self-sustaining in Upper Klamath Lake (UKL), they might be heavily preying on 8 – 15” Lost River Suckers. Apparently all varieties of catfish are reported as nonnative to the Upper Klamath Lake, Klamath River, and Lost River aqueous environment systems. In their native environment, Flat Head Catfish prefer to spawn in slackwater areas and marsh vegetation such as UKL's Hanks Marsh.

One area of high or low predation of juvenile UKL fishes, and I've never observed many waterfowl to congregate there, may be the lake water area extending ½ mile from the east shore of UKL, immediately west of Hagelstein Park Barkley Springs (Barkley Springs has a cold central water area, that while I was swimming in, I observed what appeared to be a shortnose sucker suspending in), and north about ¾ of a mile to what appears to be a lake-covered warm springs that often melt lake ice offshore in the winter.

(4) Per inclusion with this epost, is a 1921 photo of the Link River Putnam's Point 4,137.8' elevation natural reef, being apparently only partially excavated from its west side to a depth of 8', for the purpose of allowing drainage from Upper Klamath Lake to Link River's bottom elevation of 4,130'. Particularly significant is that most of the buildings aren't greatly elevated above Link River, and the presence of the masonry home that is yet present and in use on the east side of Link River canyon. My color pictures of Link River that I also include, allow for

estimations of former Link River flooding, and show some of the extent to which Link River and Putnam's Point have been modified per excavation and land fill.

Bureau of Reclamation should on the internet, currently publish the historic monthly Link River Dam, Link River elevation – *from sea level* – levels that have occurred since 1921, rather than the deceptive plus or minus a few feet of “gage” length beyond an unspecified “gage” elevation, that in the previous few years has become commonplace for industry and government Link River level reporting. Per the internet I have observed two different highly reputable public government records, neither of which I have a copy of, nor have I been able to – in the immediately last few years – find them again on the internet, and both of which listed Link River's level as never having been allowed as low as 4,137.8', since Link River Dam was completed in 1921. I estimate that prior to the 1921 installation of Link River Dam, Upper Klamath Lake probably regularly was at or near the Link River Putnam's Point 4,137.8' natural reef elevation, during at least the drier El Nino years of the on average 11 year sunspot-driven El Nino Southern Oscillation (ENSO) cycle, even though Upper Klamath Lake likely often had more marshland then, and the Cascade mountains likely often had deeper average Summer season snowpack then.

Concerning pre-Link River Dam Link River water level, the U.S. DOI Bureau of Reclamation report *Natural Flow of the Upper Klamath River* (<https://www.usbr.gov/mp/kbao/programs/docs/undepleted-klam-fnl-rpt.pdf>) provides the following very revealing quotation: ...“quote taken from newspaper referencing Spier's Klamath Ethnology (Sacramento Bee, February 26, 1959?) from Klamath County Museum. Also in this article was a quote from William Clark, “who was piloted about the area by the late Captain Oliver C Applegate. . . . The peculiar fact is that Link or Yulalona River is occasionally blown nearly dry, and the water is blown back into the lake when a strong south wind blows.” Ray Telford and others here before the time they . . . built a power dam across the Link River confirm this report. The rushing waters of Yulalona [Link] River actually were held back in the lake as the wind roared up the canyon. . . .” Spier Leslie. 1930. Klamath Ethnogeography, University of California Publications in American Archaeology and Ethnology. Vol. XXX. 338 pp.”

Thus I question the basis of which Endangered Species Act (ESA) precedence to require UKL levels throughout each year, is effectuated. Especially I question

ESA-required springtime and summertime UKL water levels, that per current climate change precipitation norms, likely wouldn't now naturally occur per UKL's former Link River drainage maximum restraint, of primarily Link River's natural 4,137.8' elevation reef and the head of Link River canyon.

For example, I estimate that prior to Link River Dam's 1921 installation, UKL suckers during several years of each century, had to adapt to lower springtime and early summertime UKL water levels, due to ENSO-caused precipitation variation. If until ESA-listed UKL sucker populations are restored or extinct, UKL water levels annually in the springtime are, per Link River Dam and closure of "A" Canal, to be held artificially high to what – per the head of Link River Canyon, and Link River Putnam's Point's former 4,137.8' elevation natural reef only – UKL's springtime water levels would now naturally be, provision should be allowed annually for at least a May commencement of "A" Canal delivery of UKL water for Klamath Reclamation Project agricultural irrigation, while of course always maintaining minimally adequate Klamath River flow from Lake Ewauna for both Klamath River fish habitat, and necessary replenishment of Lower Klamath National Wildlife refuge lake water. This "A" canal May water delivery commencement provision, could include late Fall and Winter filling of UKL to or near 4,145' Link River Dam elevation, while allowing for possible Spring flooding per possible "A" canal or Lost River Diversion Channel early Spring diversion to Tule Lake, and per possible Lake Ewauna North Canal early Spring diversion to Lower Klamath Lake, and per possible Klamath River Klamath Straits Drain early Spring diversion to Lower Klamath Lake. Much Lake Ewauna Spring flood water that may be diverted to Lower Klamath Lake, could be returned to Klamath River in late Spring and/or early Summer, like what used to occur after Spring flooding.

Climate change has given a new aridity to Klamath County, that has reduced Klamath County's annual average snowpack — e.g. Crater Lake's 1940 – 2019 average snowpack declined 36% (information derived from U.S. Department of the Interior Crater Lake Winter/Spring 2008-2009 *Crater Lake Reflections* newspaper, and from *Herald and News* 4/12/2022). The dearth of UKL tributary replenishment of UKL, that is due to increasing climate change, is a strong reason for U.S. Bureau of Reclamation to purchase the four – i.e. Iron Gate, Copco 1, Copco 2, and J.C. Boyle -- Klamath River hydroelectric dams, and to provide fish passageway upgrades to those dams as necessary, and to operate Copco 1 and Iron Gate dam reservoirs primarily for UKL and Klamath River fish habitat.

Therefore I herewith now vote, that the United States of America Department of the Interior should purchase and manage the Klamath River hydroelectric dams, and where necessary, the dams should be improved with upper Klamath River fish-adequate fish ladders and fish screens, so that J.C. Boyle and Copco 2 dams continue to provide hydroelectric power production, and so that all of the dams continue to provide much multiuse – including augmented fish habitat; flood control; upriver above any of those dams, Klamath River watershed-derived irrigation, that has below J.C. Boyle dam from any of those dams, some Klamath River watershed-derived irrigation-compensating, dam reservoir water drawdown, riverflow replenishment; and water conservation – of the Klamath River, and so that the dams are responsibly managed as public property per the United States of America's national citizenship.

Thank you very much for processing this recapitulation of our 4/27/2022 conversation, and epost of my voting.

Respectfully yours,

Danny L. Hull, BS Biology, AAS Water Quality Control Environmental Health Technology

Ref.: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> . Inclusions: Pictures: Link River Upper Reef 1921; From Putnam's Point Link River; From Putnam's Point Link River (1); Putnam's Point Right Center & Link River Center Top; Head of Link River Canyon with Link River & Putnam's Point at Center Top Right, Head of Link River at Top & at Putnam's Point in Center Ground.

(SENT)

May 20, 2022

Dear Senator Merkley:

Per inclusion with this epost are copies of my 4/27/2022 and 05/06/2022 letters for BOR Area Manager Mr. Heck, concerning applying for **Grants Notice Funding Opportunity** Number F22AS00250 grant money, to fund installation

of a Whooshh® fish elevator System in Lost River, for the purpose of re-establishing ESA-listed Lost River Sucker fish migration in Lost River.

Your epost contact page doesn't allow me to send some web URLs (i.e. Universal Resource Locator web addresses), even when I manually type those URLs onto the contact page, so I have had to leave the URLs out of the original eposts and type "URL" instead.

Thank you for helping to provide the Grants Notice Funding Opportunity Number F22AS00250 grant opportunity.

Respectfully yours,

Danny Hull

Inclusions:

2029 Sargent Avenue
Klamath Falls, OR 97601-1747

April 27, 2022

A. Heck
US Bureau of Reclamation, Klamath Basin Area Office
6600 Washburn Way
Klamath Falls OR 97603-9365
Tel.: (541) 883-6935
Epost: aheck@usbr.gov

Dear US Bureau of Reclamation Klamath Basin Office Area Manager Mr. Heck:

Per Year 1 Klamath Funding Bi-Partisan Infrastructure Law US Fish and Wildlife Service, Grants Notice Funding Opportunity Number F22AS00250; until May 08, 2022 "the U.S. Fish and Wildlife Service (FWS) is soliciting proposals for restoration activities in the Klamath Basin of Southern Oregon and Northern California. Proposals must demonstrate how the proposed restoration will improve conditions and achieve habitat restoration for waterfowl and/or native fish and wildlife species, and other aquatic species throughout the Klamath Basin."
(URL)

Thus I herewith now support and vote for the US Bureau of Reclamation, Klamath Basin Office to apply for the office to receive enough of the F22AS00250 grant money, so that from the F22AS00250 grant money that the office receives, the office funds both Reclamation's purchase of a Whooshh® System selective fish elevator (<https://www.whooshh.com/>) for, and Reclamation's installation of a Whooshh® System selective fish elevator at, each of every Lost River Dam – including Anderson-Rose, Lost River Diversion, Harpold, Malone, and Clear Lake Reservoir – where for the purpose of enabling restoration of Lost River Sucker spawning migration, that was from Tule Lake, California to the former and current Lost River Sucker spawning headwaters of upper Lost River, a fish elevator is necessary.

Per URL: "This funding opportunity is intended for projects and activities that support or will help improve river, riparian, lake, and wetland habitats, which historically supported millions of fish, waterfowl, and other native wildlife. The Service invites project proposals that fall within the entire Klamath Basin drainage from the headwaters to the mouth of the Klamath River.

Klamath Basin stakeholders have a long history of working together on restoration activities, and have also undertaken the enormous challenge of resolving major natural resource conflicts in the Klamath Basin.

Applicants are, therefore, encouraged to submit project proposals that seek out and/or build upon opportunities for collaboration with other conservation partners in the Klamath Basin. As such, the Service is encouraging project proposals to include letters of support from project partners, stakeholders, and other contributors describing their support and any role they may have in assisting with the project.

Endorsement letters will help the Service judge whether projects are widely supported. The Service encourages project proposals to include letters of support from local Tribes, Counties and other local governments, States or State Agencies, and other conservation partners. Special consideration will also be given to restoration projects proposed on tribal lands or those that may affect tribes and/or their lands."

Thank you for processing this vote for installation of fish elevator tubes at Lost River dams.

Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology.

Post Script: During the immediately forthcoming few days, I will try to send for you a recapitulation of our April 27, 2022 afternoon telephone conversation, concerning both ESA listed shortnose and Lost River suckers, and the Upper Klamath Lake Ball Bay southwest circular excavated area, that in 1963 I observed a large number of shortnose suckers, swimming head to tail fin counterclockwise in a continuous loop of.

May 06, 2022

A. Heck

US Bureau of Reclamation, Klamath Basin Area Office

6600 Washburn Way

Klamath Falls OR 97603-9365

Tel.: (541) 883-6935

Epost: aheck@usbr.gov

Dear US Bureau of Reclamation Klamath Basin Office Area Manager Mr. Heck:

During our April 27, 2022 telephone conversation, I mentioned (1) the Shortnose Sucker; (2) the Lost River Sucker; (3) an approximately 11" flat head catfish that I caught in Gerber Reservoir; (4) Link River Putnam's Point 4,137.8' elevation natural reef. Some of the significance of each of those topics that I wanted to express, is as follows:

(1) Most likely in the Spring of 1964 – although it may have been sometime in 1963 – myself and several family members observed what appeared to be many hundreds of shortnose suckers, that were swimming counter clockwise in the

approximately ½ city block size, circular human excavated area on the south west side of Upper Klamath Lake Ball Bay, approximately 2/3 of a mile north of the Highway 140 east side gravel pile storage, that is just north and west of a large fenced private pasture. Most of the suckers were near 12” long. Several of the suckers had lamprey ulcerations on their dorsal areas, and the numerous suckers were swimming nearly head to tail fin together.

(2) For partial restoration of Lost River Sucker migration in Lost River, the Lost River Suckers might be collectible with a Whooshh® (<https://www.whooshh.com/>) fish elevator tube system at Anderson-Rose Dam on Lost River, and then transported via truck to Clear Lake Reservoir that is on Lost River, for migration to Lost River headwaters – Willow Creek for example – spawning areas. I estimate that young Lost River Suckers slip downstream from Clear Lake Reservoir to Tule Lake, where they become stranded for the rest of their lives.

(3) Approximately 1985 I caught a near 11” flat head catfish – likely on an “A” canal minnow, though possibly on an earthworm – in Gerber Reservoir (also in Gerber Reservoir, with an earthworm I caught what appears to have been a 5 pound Corydoras home aquarium type of catfish!). If flat head catfish are reproductively self-sustaining in Upper Klamath Lake (UKL), they might be heavily preying on 8 – 15” Lost River Suckers. Apparently all varieties of catfish are reported as nonnative to the Upper Klamath Lake, Klamath River, and Lost River aqueous environment systems. In their native environment, flat head catfish prefer to spawn in slackwater areas and marsh vegetation such as UKL's Hanks Marsh.

One area of high or low predation of juvenile UKL fishes, and I've never observed many waterfowl to congregate there, may be the lake water area extending ½ mile from the east shore of UKL, immediately west of Hagelstein Park Barkley Springs (Barkley Springs has a cold central water area, that while I was swimming in, I observed what appeared to be a shortnose sucker suspending in), and north about ¾ of a mile to what appears to be a lake-covered warm spring that often melts lake ice offshore in the winter.

(4) Per inclusion with this epost, is a 1921 photo of the Link River Putnam's Point 4,137.8' elevation natural reef, being apparently only partially excavated from its

west side to a depth of 8', for the purpose of allowing drainage from Upper Klamath Lake to Link River's bottom elevation of 4,130'. Particularly significant is that most of the buildings aren't greatly elevated above Link River, and the presence of the masonry home that is yet present and in use on the east side of Link River canyon. My color pictures of Link River that I also include, allow for estimations of former Link River flooding, and show some of the extent to which Link River and Putnam's Point have been modified per excavation and land fill.

Bureau of Reclamation should on the internet, currently publish the historic monthly Link River Dam, Link River elevation – from sea level – levels that have occurred since 1921, rather than the deceptive plus or minus a few feet of “gage” length beyond an unspecified “gage” elevation, that in the previous few years has become commonplace for industry and government Link River level reporting.

Per the internet I have observed two different highly reputable public government records, neither of which I have a copy of, nor have I been able to – in the immediately last few years – find them again on the internet, and both of which listed Link River's level as never having been allowed as low as 4,137.8', since Link River Dam was completed in 1921. I estimate that prior to the 1921 installation of Link River Dam, Upper Klamath Lake probably regularly was at or near the Link River Putnam's Point 4,137.8' natural reef elevation, during at least the drier El Nino years of the on average 11 year sunspot-driven El Nino Southern Oscillation (ENSO) cycle, even though Upper Klamath Lake likely often had more marshland then, and the Cascade mountains likely often had deeper average summer season snowpack then.

Concerning pre-Link River Dam Link River water level, the U.S. DOI Bureau of Reclamation report Natural Flow of the Upper Klamath River (URL) provides the following very revealing quotation: . . . "quote taken from newspaper referencing Spier's Klamath Ethnology (Sacramento Bee, February 26, 1959?) from Klamath County Museum. Also in this article was a quote from William Clark, “who was piloted about the area by the late Captain Oliver C Applegate. . . . The peculiar fact is that Link or Yulalona River is occasionally blown nearly dry, and the water is blown back into the lake when a strong south wind blows.” Ray Telford and others here before the time they . . . built a power dam across the Link River confirm this report. The rushing waters of Yulalona [Link] River actually were held back in the lake as the wind roared up the canyon. . . .” Spier

Leslie. 1930. Klamath Ethnogeography, University of California Publications in American Archaeology and Ethnology. Vol. XXX. 338 pp.”

Thus I question the basis of which Endangered Species Act (ESA) precedence to require UKL levels throughout each year, is effectuated. Especially I question ESA-required springtime and summertime UKL water levels, that per current climate change precipitation norms, likely wouldn't now naturally occur per UKL's former Link River drainage maximum restraint, of primarily Link River's natural 4,137.8' elevation reef and the head of Link River canyon.

For example, I estimate that prior to Link River Dam's 1921 installation, UKL suckers during several years of each century, had to adapt to lower springtime and early summertime UKL water levels, due to ENSO-caused precipitation variation. If until ESA-listed UKL sucker populations are restored or extinct, UKL water levels annually in the springtime are, per Link River Dam and closure of “A” Canal, to be held artificially high to what – per the head of Link River Canyon, and Link River Putnam's Point's former 4,137.8' elevation natural reef only – UKL's springtime water levels would now naturally be, provision should be allowed annually for at least a May commencement of “A” Canal delivery of UKL water for Klamath Reclamation Project agricultural irrigation, while of course always maintaining minimally adequate Klamath River flow from Lake Ewauna for both Klamath River fish habitat, and necessary replenishment of Lower Klamath National Wildlife refuge lake water.

This “A” canal May water delivery commencement provision, could include late Fall and Winter filling of UKL to or near 4,145' Link River Dam elevation, while allowing for possible Spring flooding per possible “A” canal or Lost River Diversion Channel early Spring diversion to Tule Lake, and per possible Lake Ewauna North Canal early Spring diversion to Lower Klamath Lake, and per possible Klamath River Klamath Straits Drain early Spring diversion to Lower Klamath Lake. Much Lake Ewauna Spring flood water that may be diverted to Lower Klamath Lake, could be returned to Klamath River in late Spring and/or early Summer, like what used to occur after Spring flooding.

Climate change has given a new aridity to Klamath County, that has reduced Klamath County's annual average snowpack — e.g. Crater Lake's 1940 – 2019 average snowpack declined 36% (information derived from U.S. Department of

the Interior Crater Lake Winter/Spring 2008-2009 Crater Lake Reflections newspaper, and from Herald and News 4/12/2022). The dearth of UKL tributary replenishment of UKL, that is due to increasing climate change, is a strong reason for U.S. Bureau of Reclamation to purchase the four – i.e. Iron Gate, Copco 1, Copco 2, and J.C. Boyle -- Klamath River hydroelectric dams, and to provide fish passageway upgrades to those dams as necessary, and to operate Copco 1 and Iron Gate dam reservoirs primarily for UKL and Klamath River fish habitat.

Therefore I herewith now vote, that the United States of America Department of the Interior should purchase and manage the Klamath River hydroelectric dams, and where necessary, the dams should be improved with upper Klamath River fish-adequate fish ladders and fish screens, so that J.C. Boyle and Copco 2 dams continue to provide hydroelectric power production, and so that all of the dams continue to provide much multiuse – including augmented fish habitat; flood control; upriver above any of those dams, Klamath River watershed-derived irrigation, that has below J.C. Boyle dam from any of those dams, some Klamath River watershed-derived irrigation-compensating, dam reservoir water drawdown, riverflow replenishment; and water conservation – of the Klamath River, and so that the dams are responsibly managed as public property per the United States of America's national citizenship.

Thank you very much for processing this recapitulation of our 4/27/2022 conversation, and epost of my voting.

Respectfully yours,

Danny L. Hull, BS Biology, AAS Water Quality Control Environmental Health Technology

Ref.: URL

Inclusions: Pictures: Link River Upper Reef 1921; From Putnam's Point Link River; From Putnam's Point Link River (1); Head of Link River Canyon with Link River & Putnam's Point at center top right.

May 23, 2022

Dear Senator Merkley:

Per inclusion with this epost is a copy of my May 03, 2022 epost letter forward for City of Klamath Falls Attorney Mr. Michael Swanson, that includes a copy of my original May 02, 2022 epost letter for City of Klamath Falls Public Works Department personnel, that pertains to applying for **Grants Notice Funding Opportunity** Number F22AS00250 grant money, to fund installation of a tertiary water treatment facility for the City of Klamath Falls municipal wastewater treatment plant and/or for the City of Klamath Falls South Suburban Sanitary District wastewater treatment lagoons, for the purpose of providing tertiary treated – i.e. completely cleaned – wastewater from either or both the City of Klamath Falls secondarily treated municipal wastewater effluent, and/or from the City of Klamath Falls South Suburban Sanitary District secondarily treated lagoon wastewater effluent, to the Klamath River and/or to municipal and/or industrial water recycling use. On May 02, 2022 I also eposted for the City of Klamath Falls South Suburban Sanitary District, a letter that was much similar to my May 02, 2022 City of Klamath Falls Public Works Department personnel letter.

Your epost contact page doesn't allow me to send some web URLs (i.e. Universal Resource Locator web addresses), even when I manually type those URLs onto the contact page, so I have had to leave the URLs out of the original eposts and type "URL" instead.

Thank you for helping to provide the Grants Notice Funding Opportunity Number F22AS00250 grant opportunity.

Respectfully yours,

Danny Hull

Inclusions:

2029 Sargent Avenue

Klamath Falls, OR 97601

May 03, 2022

City of Klamath Falls Attorney Mr. Michael Swanson

500 Klamath Avenue

Klamath Falls, OR 97601

Phone: 541-883-5323

Epost: jcole@klamathfalls.city

Dear City of Klamath Falls Attorney Mr. Michael Swanson:

Herewith per inclusion of this forward is a copy of my May 02, 2022 epost for City of Klamath Falls Public Works Department Personnel.

Thank you for processing this epost forward!

Respectfully yours,

Danny Hull, BS Biology, AAS Water Quality Control Environmental Health Technology

----- Forwarded Message ----- Subject: Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and Wildlife Service Funding Opportunity Number: F22AS00250 **Grant Application**, for Klamath Falls Tertiary Wastewater Treatment Plant Construction

Date: Mon, 2 May 2022 13:51:53 -0600

From: Danny Hull

2029 Sargent Avenue

Klamath Falls, OR 97601

To: Citypublicworks@klamathfalls.city

CC: ssouders@klamathfalls.city, jwall@klamathfalls.city,
alakey@klamathfalls.city, citypublicworks@klamathfalls.city

May 02, 2022

Klamath Falls City Public Works Personnel

226 S 5th Street

Klamath Falls, OR 97601

Tel.: 541-883-5363

Epost: Citypublicworks@klamathfalls.city

SUBJECT: Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and
Wildlife Service **Funding Opportunity** Number: F22AS00250 Grant
(<https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>).

Dear City of Klamath Falls Public Works Department Personnel:

Upper Klamath Lake, Link River, Lake Ewauna, and upper Klamath River to Iron Gate Dam are known to be naturally eutrophic of phosphorous and nitrogen, and are said to be hypereutrophic of anthropogenic-supplied phosphorous and nitrogen. Recently it has been claimed that high phosphorous levels in Upper Klamath Lake are causing critical reduction of two Endangered Species Act-listed, Upper Klamath Lake/Lake Ewauna sucker fish populations, the Lost River Sucker (cw'aam) and the Shortnose Sucker (koptu), per the high phosphorous levels promoting excessive blue-green algae growth. One of the strongest claims against Copco 1 and Iron Gate reservoirs, is the abundant toxic anabaena and microcystis blue-green algae populations that hypereutrophic Klamath River water supports in both reservoirs.

A reasonable intervention to reduce algal growth supporting phosphorous and nitrogen in Upper Klamath Lake, and to reduce toxic anabaena and microcystis blue-green algae populations in Copco 1 and Iron Gate reservoirs, and to improve Klamath River water quality, is to add tertiary wastewater treatment to the city of

Chiloquin municipal wastewater treatment plant. However on June 22, 2021 the City of Chiloquin opted – per grant funding mostly -- for construction of a new \$3.2 million sewage treatment lagoon complex to replace the Chiloquin municipal water secondary treatment plant, although that treatment venue risks groundwater contamination, and continues to deplete fresh water wells that could be supplemented with tertiary treated, clean recycled water. Also, if as planned, the treated lagoon effluent is used for crop irrigation, some of the effluent nutrients might possibly migrate to Upper Klamath Lake, depending on where the effluent is applied to cropland.

Since both the City of Klamath Falls municipal wastewater treatment plant, and the Klamath Falls South Suburban Sanitary District (SSSD) wastewater treatment lagoons, together add to Lake Ewauna a much larger quantity of phosphorous and nitrogen than what the Chiloquin municipal wastewater treatment plant was last year adding to the Williamson River, adding a tertiary wastewater treatment facility to the City of Klamath Falls municipal wastewater treatment plant and to the Klamath Falls South Suburban Sanitary District wastewater treatment lagoons, should result in a large reduction in phosphorous and nitrogen support of blue-green algae growth in Lake Ewauna and Klamath River.

Given that (1) the city of Klamath Falls is currently completing a \$54 million upgrade – primarily at the expense of the city's ratepayers -- of the city's municipal wastewater treatment plant, that will improve the quality of the plant's treated water effluent discharge to Lake Ewauna, although that water will not be tertiary treated before it is discharged to Lake Ewauna; and (2) the Klamath Falls South Suburban Sanitary District (SSSD) wastewater treatment lagoons, currently serve as only secondary treatment of suburban wastewater before that wastewater is discharged into Lake Ewauna, and are located within 1.5 miles of the Klamath Falls city municipal wastewater treatment plant, with a large tract of vacant land between them; (3) a new wastewater tertiary treatment facility for both the SSSD lagoons and the Klamath Falls municipal wastewater treatment plant, could be built to provide best quality treated wastewater for urban/suburban water recycling and/or discharge to Lake Ewauna.

(Since I lived aboard a U.S. Navy aircraft carrier at sea for 11 months, 47 years ago, I have no trouble with consuming cleaned and recycled sea-discharged

wastewater. Our aircraft carrier wastewater flushed directly to the sea from which we derived our entire daily fresh water supply.)

“Department of Environmental Quality” (DEQ) “Chapter 340 Division 41 Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon 340-041-0007 Statewide Narrative Criteria”

([https://secure.sos.state.or.us/oard/viewSingleRule.action?](https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68690)

ruleVrsnRsn=68690), states: “(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows **must in every case be provided** so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.”

Per the immediately aforesaid DEQ “Chapter 340 Division 41 Water Quality Standards, Oregon Department of Environmental Quality has recurrently sought to encourage, guide, and promote Chiloquin and Klamath Falls to upgrade their municipal wastewater treatment plants with tertiary wastewater treatment, so as to substantially improve Upper Klamath Lake and Klamath River water quality. Recurrently, and even though the City of Corvallis has utilized tertiary wastewater treatment for many years, the Cities of Chiloquin and Klamath Falls have claimed that they financially couldn't practicably afford to install a tertiary wastewater treatment facility at their municipal wastewater treatment plants.

Not only has Klamath County been in severe to exceptional drought for multiple years of the immediately previous six years now, but also climate change has given a new aridity to Klamath County, that has reduced Klamath County's annual average snowpack – e.g. Crater Lake's 1940 – 2019 average snowpack declined 36% (information derived from U.S. Department of the Interior Crater Lake Winter/Spring 2008-2009 Crater Lake Reflections newspaper, and from Herald and News 4/12/2022) – so that tributary flows to Upper Klamath Lake, Klamath River, and Lost River have been reduced. Climate change reduced water volume flow from Upper Klamath Lake, per Link River to Lake Ewauna, may significantly benefit from wastewater discharge flows from the Klamath Falls municipal wastewater treatment plant, and the SSSD wastewater lagoons, being tertiary treated; in consequence of those comparatively small wastewater discharge flows,

due to tertiary treatment, both ceasing to add much phosphorous and nitrogen to Klamath River, and diluting phosphorous and nitrogen in Klamath River.

Much Link River and Klamath River irrigation withdrawal was curtailed in 2021, so as to maintain for fish, higher Upper Klamath Lake levels and greater Klamath River flows. Groundwater levels in the Lake Ewauna/Lost River Klamath Basin have lowered greatly – e.g. the City of Merrill had to lower its well 80 feet – and aren't predicted to recover in the near to intermediate future.

Of these and related circumstances – including many years of grossly deficient water volume supply for Lower Klamath National Wildlife Refuge – I find and herewith now vote that the City of Klamath Falls and the Klamath Falls South Suburban Sanitary District should each apply to receive adequate funding from the Year 1 Klamath Funding Bi-Partisan Infrastructure Law, US Fish and Wildlife Service Funding Opportunity Number: F22AS00250, so that they may each construct a new tertiary wastewater treatment plant to utilize for final cleaning, and possibly recycling, of their wastewater. The City of Klamath Falls municipal wastewater treatment plant and SSSD wastewater treatment lagoons could both use the same tertiary treatment plant.

Description of the number F22AS00250 grant opportunity is available at <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570> . The current closing date for applications is May 08, 2022. "Electronically submitted applications must be submitted no later than 11:59 p.m., ET, on the listed application due date."* The estimated total program funding is \$15,000,000.00, with an award ceiling of \$2,000,000.00 and an award floor of \$50,000.00.

Thank you for processing this advocacy petition and vote, for providing funds to construct tertiary wastewater treatment facilities, for the City of Klamath Falls municipal wastewater treatment plant, and for the Klamath Falls South Suburban Sanitary District wastewater treatment lagoons.

Respectfully yours,

Danny Hull, B.S. Biology, A.A.S. Water Quality Control Environmental Health Technology

*Ref.: Internet URL: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=338570>
